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FISHING INFORMATION

NOVEMBER 1975 , No. 11

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PREFACE

This publication, Fishing Information, appears monthly and contains 1) fishery advisory information, 2) a narrative description of pertinent surface temperature conditions, 3) charts of winds and pressures for the eastern North Pacific, 4) charts of sea surface temperature for the North Pacific and eastern tropical Pacific, and 5) charts of subsurface temperature structure in the eastern North Pacific.

A supplement to Fishing Information appears at 15-day intervals throughout the year. This is a chart of sea surface temperature (contoured at 2°F (1°C) intervals) from Baja California to Vancouver Island out to about 135°W. Special bulletins are published in conjunction with the 15-day sea surface temperature charts which include short-term projections of albacore distribution and locations of productive fishing areas, information on oceanographic and atmospheric conditions, and other information as is appropriate during the albacore fishing season.

The Secretary of Commerce has determined that the publication of this periodical is necessary in the transaction of the public business required by law of this Department. Use of funds for printing this publication approved by the Office of Management and Budget, August 20, 1973; this approval expires June 1976.

Submitted for publication - December 24, 1975

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ENVIRONMENTAL CHARTS ANALYZED BY:

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J. Renner (Figures 1, 2, 3, 4, 5, 6, 7, 10, 11 and 15-day Supplement)

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Expendable bathythermograph and salinity observations are made by the mates and engineers of the *Californian* and *Hawaiian Queen* of Matson Navigation Co. The data are processed under supervision of D.R. McLain at the NMFS Pacific Environmental Group, Monterey, using computer facilities of the Fleet Numerical Weather Center. The project is partially supported by the National Science Foundation and the Office of Naval Research under Government NAonr-9-74.

Sea Surface Temperature and Environmental Conditions

N. CLARK AND F. MILLER

Eastern North Pacific

Seasonal cooling continued over the entire eastern North Pacific during November 1975. The largest decreases in sea surface temperature were in a region between 35°N and 50°N and 135°W and 170°W where temperatures dropped 5 to 7°F (2.8 to 3.9°C) from values in October.

The sea surface temperature anomaly pattern for November is similar to that of October and the one that has persisted over the eastern North Pacific since the beginning of 1975. A large area of 1 to 3°F (0.6 to 1.7°C) above-normal temperatures covered the central North Pacific; 1 to 3°F (0.6 to 1.7°C) below-normal temperatures occurred in the Gulf of Alaska, 3 to 5°F (1.7 to 2.8°C) below-normal temperatures were off the western coast of North America, and 1 to 3°F (0.6 to 1.7°C) below-normal temperatures occurred over a large area extending westward from Baja California to the Hawaiian Islands.

The greatest change in the anomaly pattern occurred in a region located between 35°N and 45°N and 140°W and 160°W where temperatures that were 1 to 3°F (0.6 to 1.7°C) above-normal dropped to 1 to 3°F (0.6 to 1.7°C) below-normal values.

Sea level pressures were above normal over the eastern North Pacific south of 45°N and below normal between 45°N and the Aleutian Islands and over the Gulf of Alaska. The resultant pressure gradients caused greater-than-normal west-to-southwesterly winds over the eastern North Pacific between 40°N and 55°N which, in turn, caused increased heat exchange between the ocean and atmosphere and further erosion of the north and northeast portions of the relatively warm water region in the central North Pacific.

Western North Pacific

The greatest change in the sea surface temperature anomaly pattern occurred in a region bounded by 20°N and 35°N and 150°E and 180° where temperatures that were 1 to 2°F (0.6 to 1.1°C) below normal or just slightly above increased to 1 to 3°F (0.6 to 1.7°C) above-normal values in November 1975. Farther to the north between 35°N and 45°N, the area of below-normal temperatures that persisted throughout the summer and early fall months continued to decrease in size and intensity, with small regions of above-normal temperatures appearing.

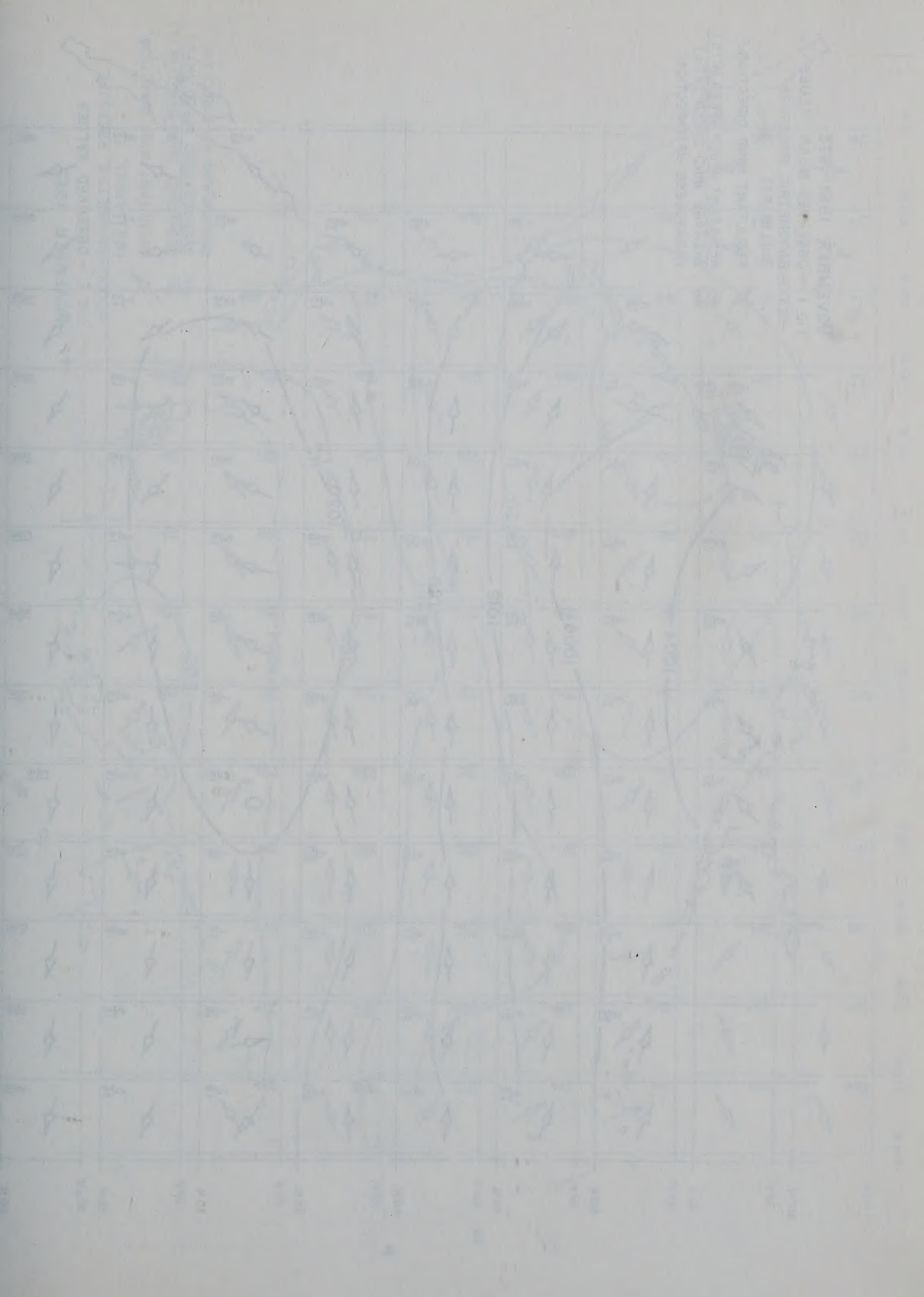
Other changes in the anomaly pattern occurred southwest of Honshu where 1 to 4°F (0.6 to 2.2°C) above-normal temperatures decreased to 1 to 2°F (0.6 to 1.1°C) below-normal values and in a region bounded by 20°N and 35°N and 135°E and 150°E where above-normal temperatures decreased to slightly below-normal values.

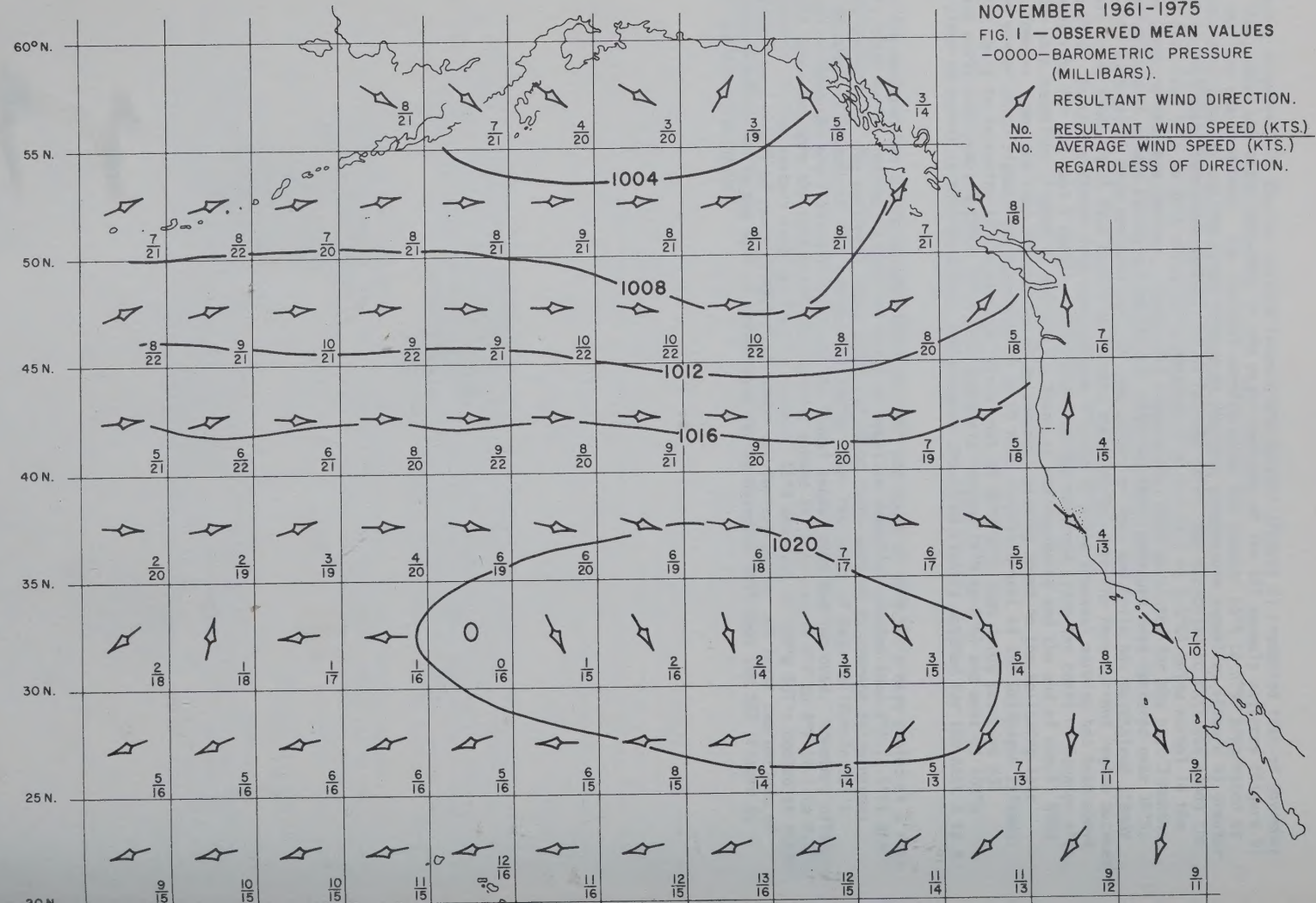
Eastern Tropical Pacific

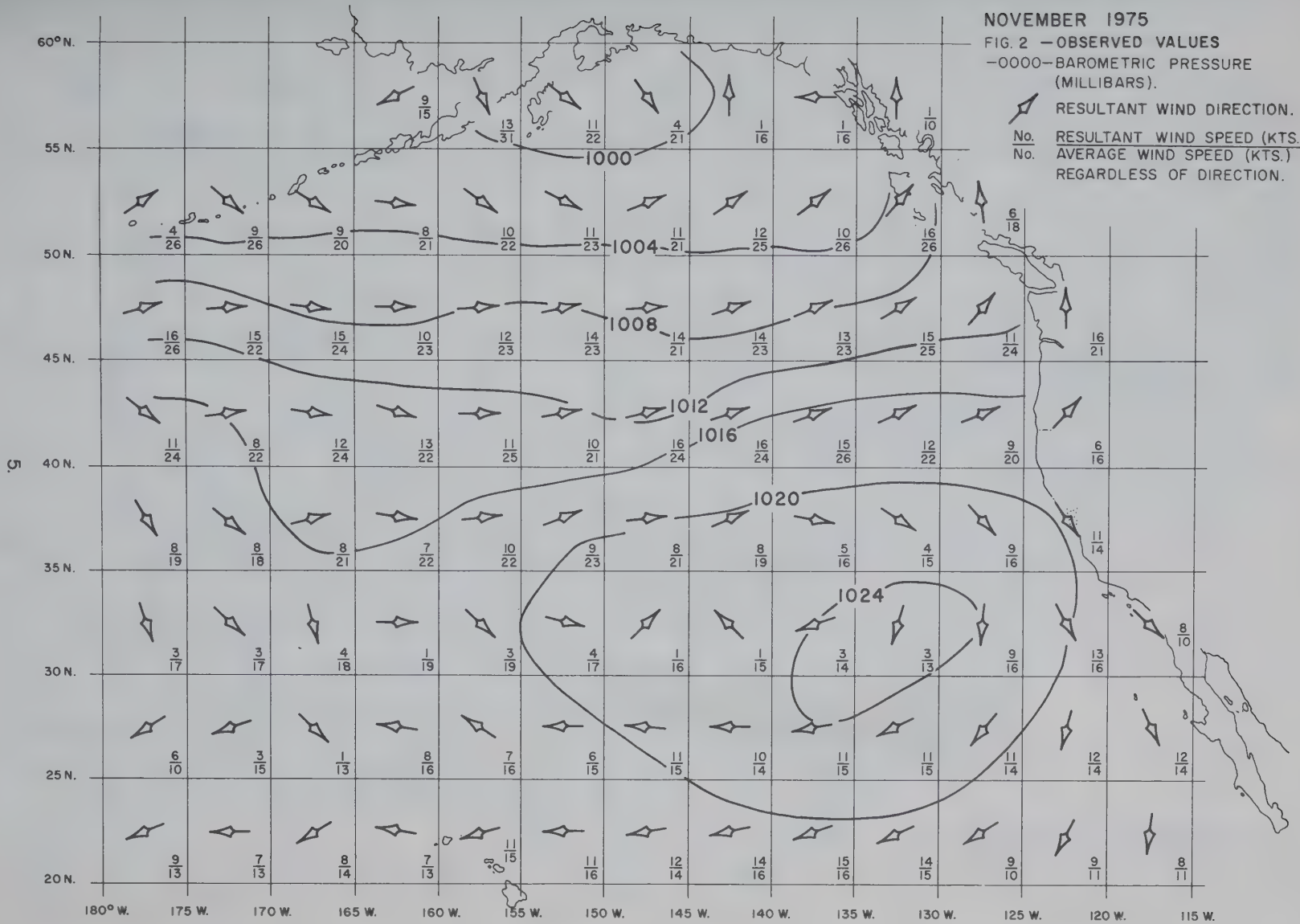
During November in the northern hemisphere sea surface temperatures normally decrease with the greatest seasonal decreases of 2 to 3°F (1.1 to 1.7°C) along the west coasts of Baja California and Mexico between 10°N and 30°N. In the southern hemisphere there is a seasonal warming trend with a maximum of 2 to 3°F (1.1 to 1.7°C) at the surface of the Peru Current from 5°N to 25°S. Elsewhere south of the equator there is normally a slight warming in the surface layers during November.

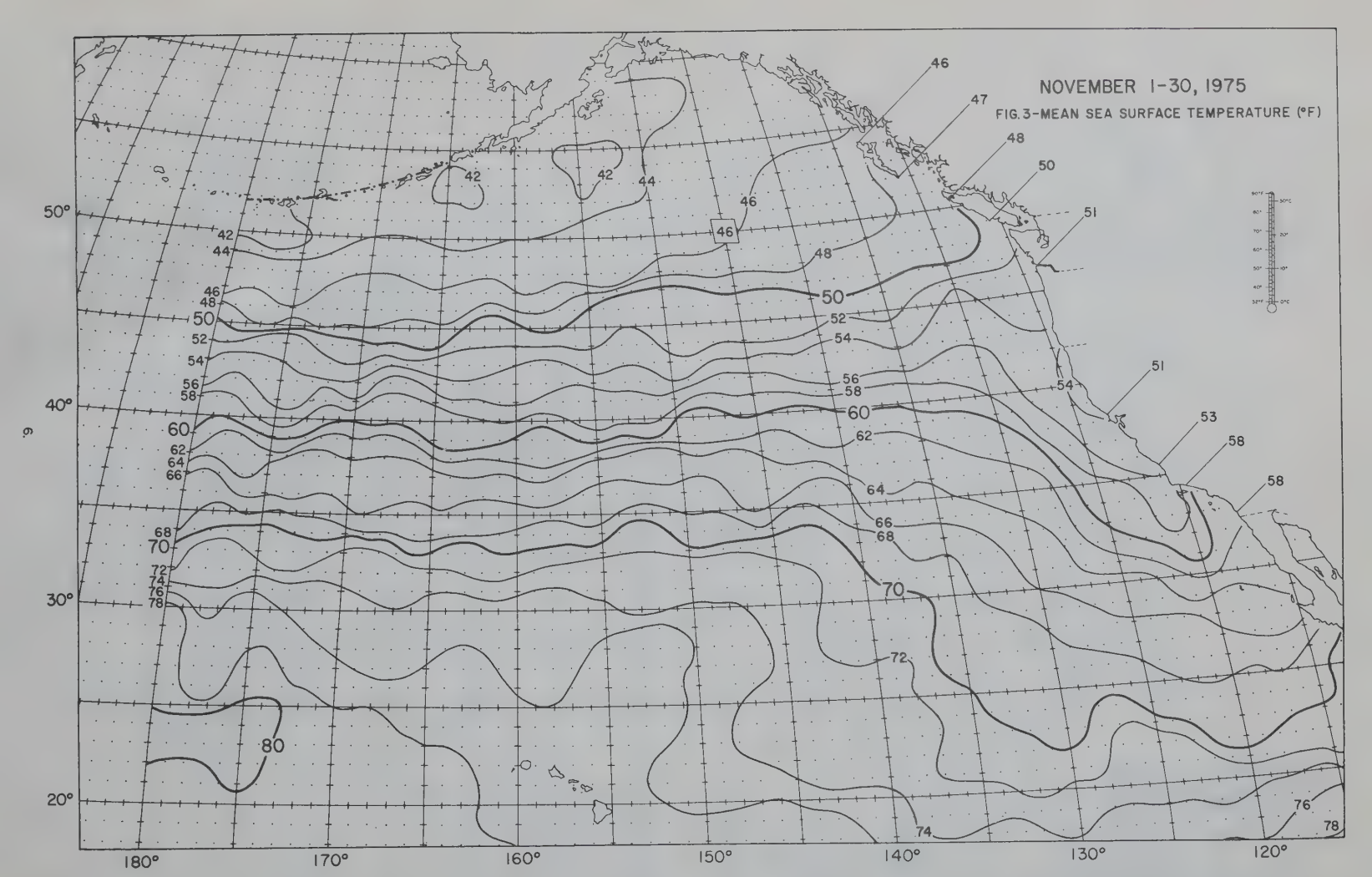
During November 1975 the sea surface temperature pattern (Figure 8) resembled that of November 1974. Thus, there was close agreement in the major features of the SST anomaly patterns (Figure 9) during the last two Novembers. The seasonal warming along the equator (5°N to 5°S) progressed at an above-normal rate because the areas covered by negative temperature anomalies (Figure 9) greater than 4°F (2.2°C) have diminished markedly since October 1975. One exception to this was along the coast of Peru from 10°S to 20°S where SST's remained 2 to 5°F (1.1 to 2.8°C) below normal in the offshore areas of the Peru Current. These cold temperatures have persisted for the past 3 months in association with a very strong and persistent high sea level pressure area centered near 30°S, 90°W. This subtropical high pressure cell off the coasts of Peru and Chile has maintained steady southeast trade winds which have been 3 to 7 knots above normal over the Peru Current region between 5°S and 25°S. Farther offshore from Peru between 5°S and 12°S the seasonal warming has been above the normal rate for the past 2 months. This condition has occurred along the coast of Ecuador also. These two warm anomalies (Figure 9) are usually found at the beginning and the end of non-El Niño years. However, they are also forerunners of an abnormal warming trend in the following late southern winter which signals the beginning of an El Niño condition east of the Galápagos Islands. It is too early to determine if the surface layers east of 90°W will show large positive SST anomalies early next year; but the SST in the equatorial region (5°N to 5°S) and west of 100°W are so close to normal at this time that temperatures should be closely watched for the next 3 to 4 months.

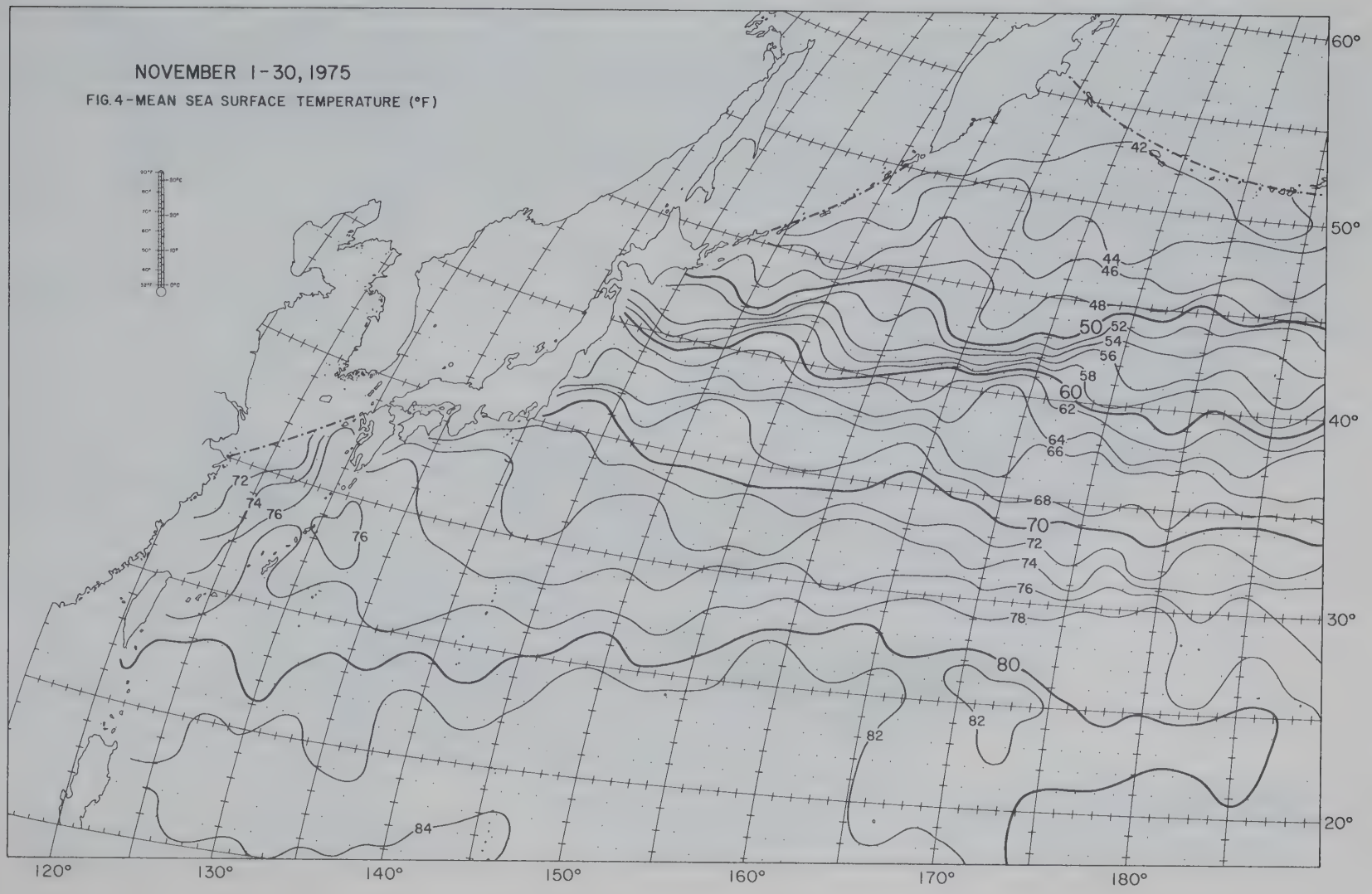
In the northern hemisphere between 120°W and 180° and south of 20°N SST's have cooled at a rate slightly below normal indicating that the areas of negative anomalies greater than 2°F (1.1°C) are somewhat diminished. The northeast trade winds and cloud cover were on an average below normal during November 1975 south of 20°N and west of 120°W. Near the coast of Baja California SST's increased in November and fishing in parts of the "local banks" area had improved. However, offshore a hundred miles and more the cold California Current caused SST's to remain 2°F to 4°F (1.1 to 2.2°C) below normal. In the eastern tropical Pacific south of 15°N and east of 100°W SST's cooled at rates above normal as a result of above-normal cloud cover and surface winds. At least two periods of very strong northerlies in the Gulf of Tehuantepec during November 1975 kept the SST (Figure 8) several degrees below normal.

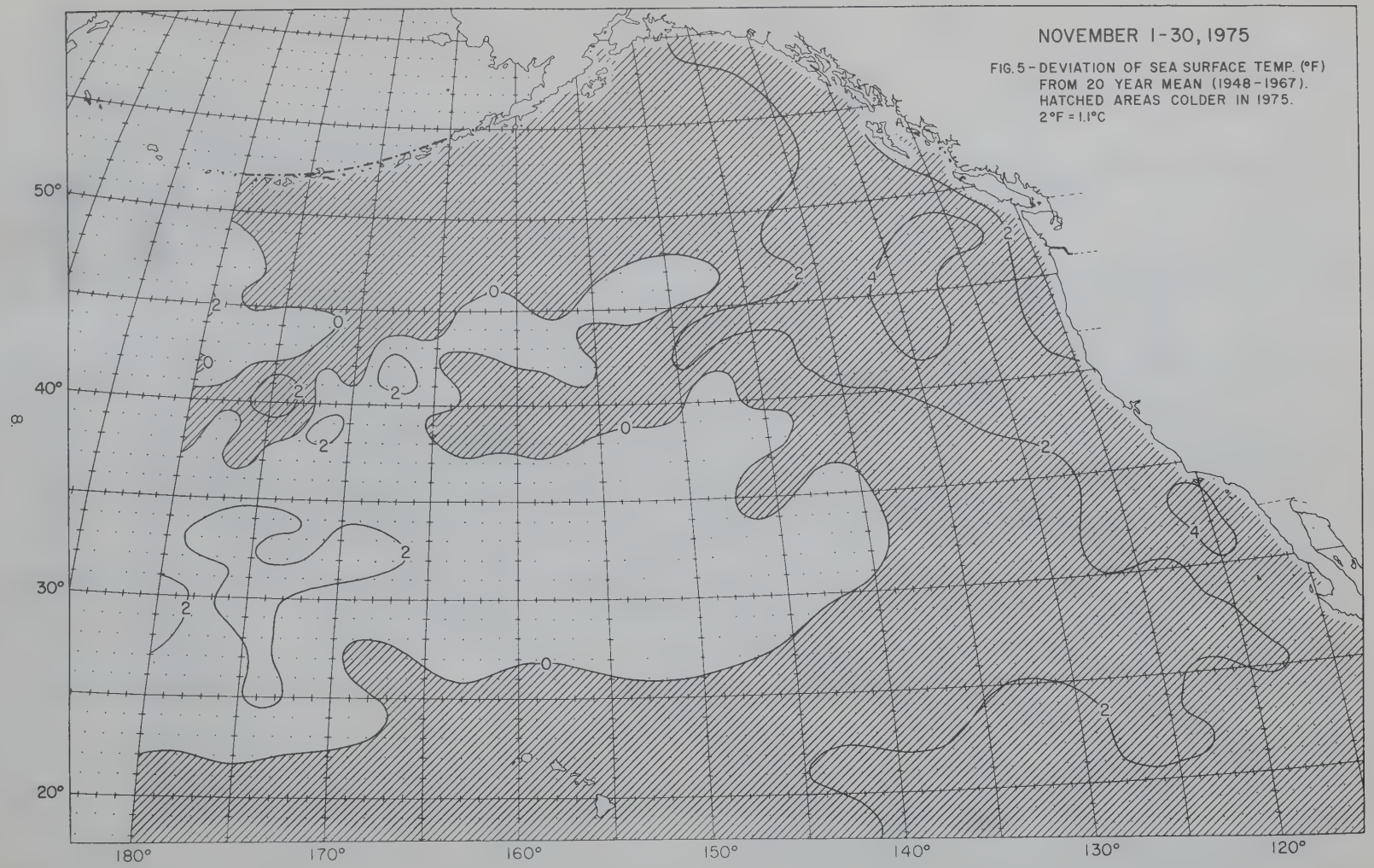


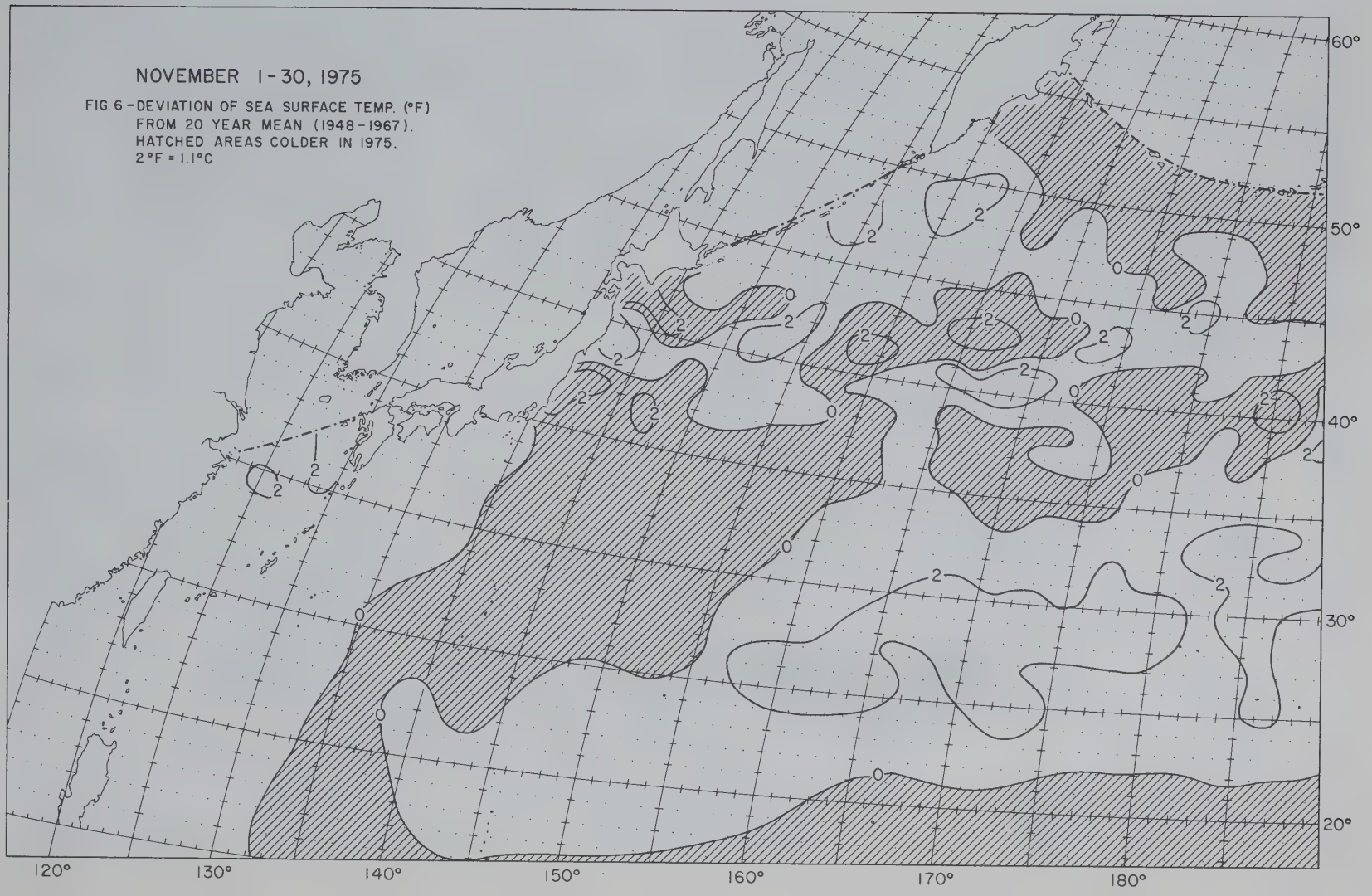

NOVEMBER 1961-1975
FIG. 1 —OBSERVED MEAN VALUES
—0000— BAROMETRIC PRESSURE (MILLIBARS).
RESULTANT WIND DIRECTION.
No. / No. RESULTANT WIND SPEED (KTS.) / AVERAGE WIND SPEED (KTS.) REGARDLESS OF DIRECTION.
60° N.
55 N.
50 N.
45 N.
40 N.
35 N.
30 N.
25 N.
1004
1008
1012
1016
1020

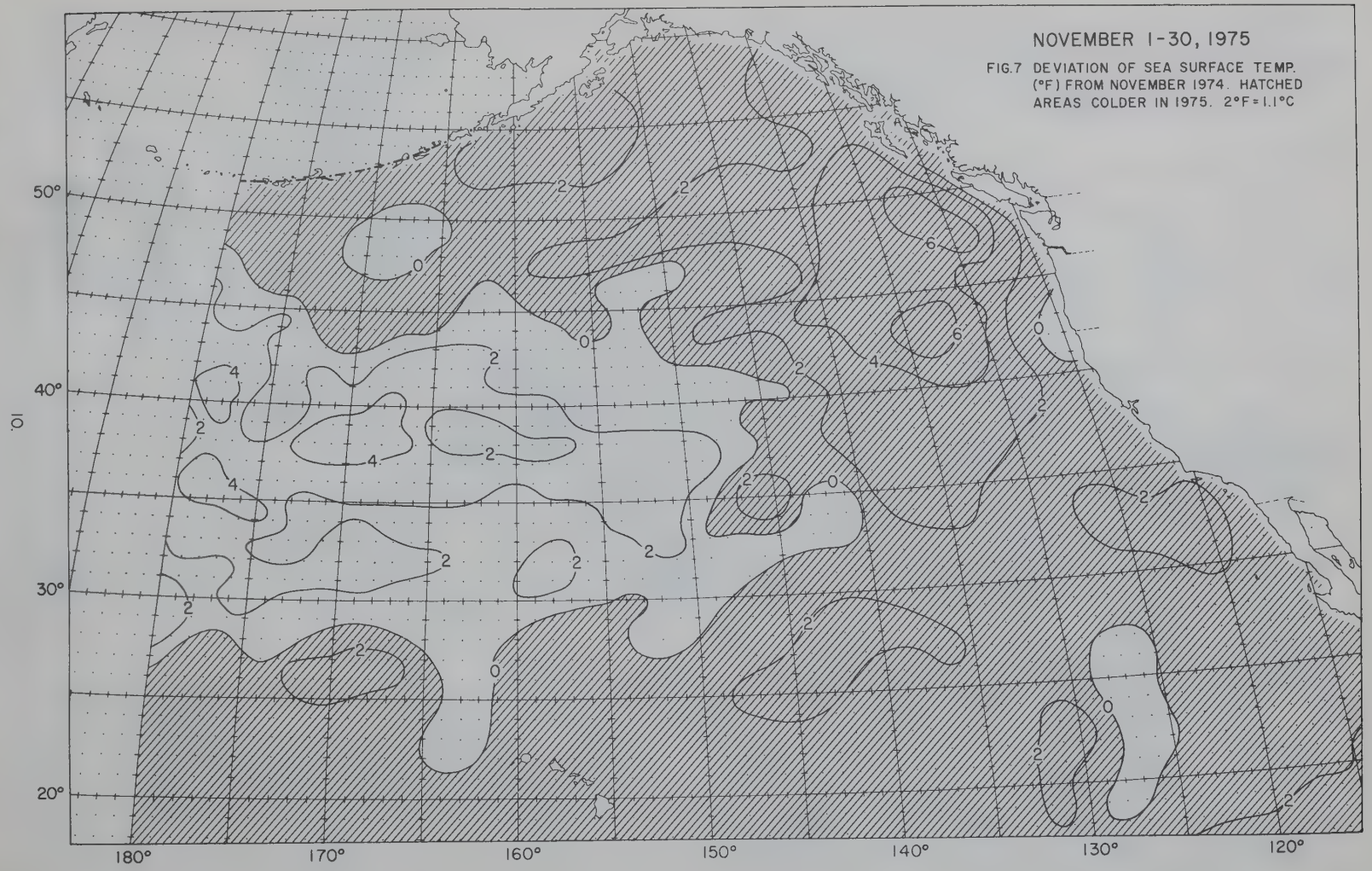

NOVEMBER 1975
FIG. 2 —OBSERVED VALUES
—0000— BAROMETRIC PRESSURE (MILLIBARS).
RESULTANT WIND DIRECTION.
No. RESULTANT WIND SPEED (KTS.)
No. AVERAGE WIND SPEED (KTS.) REGARDLESS OF DIRECTION.
1000
1004
1008
1012
1016
1020
1024
60° N.
55 N.
50 N.
45 N.
40 N.
35 N.
30 N.
25 N.
20 N.
180° W.
175 W.
170 W.
165 W.
160 W.
155 W.
150 W.
145 W.
140 W.
135 W.
130 W.
125 W.
120 W.
115 W.

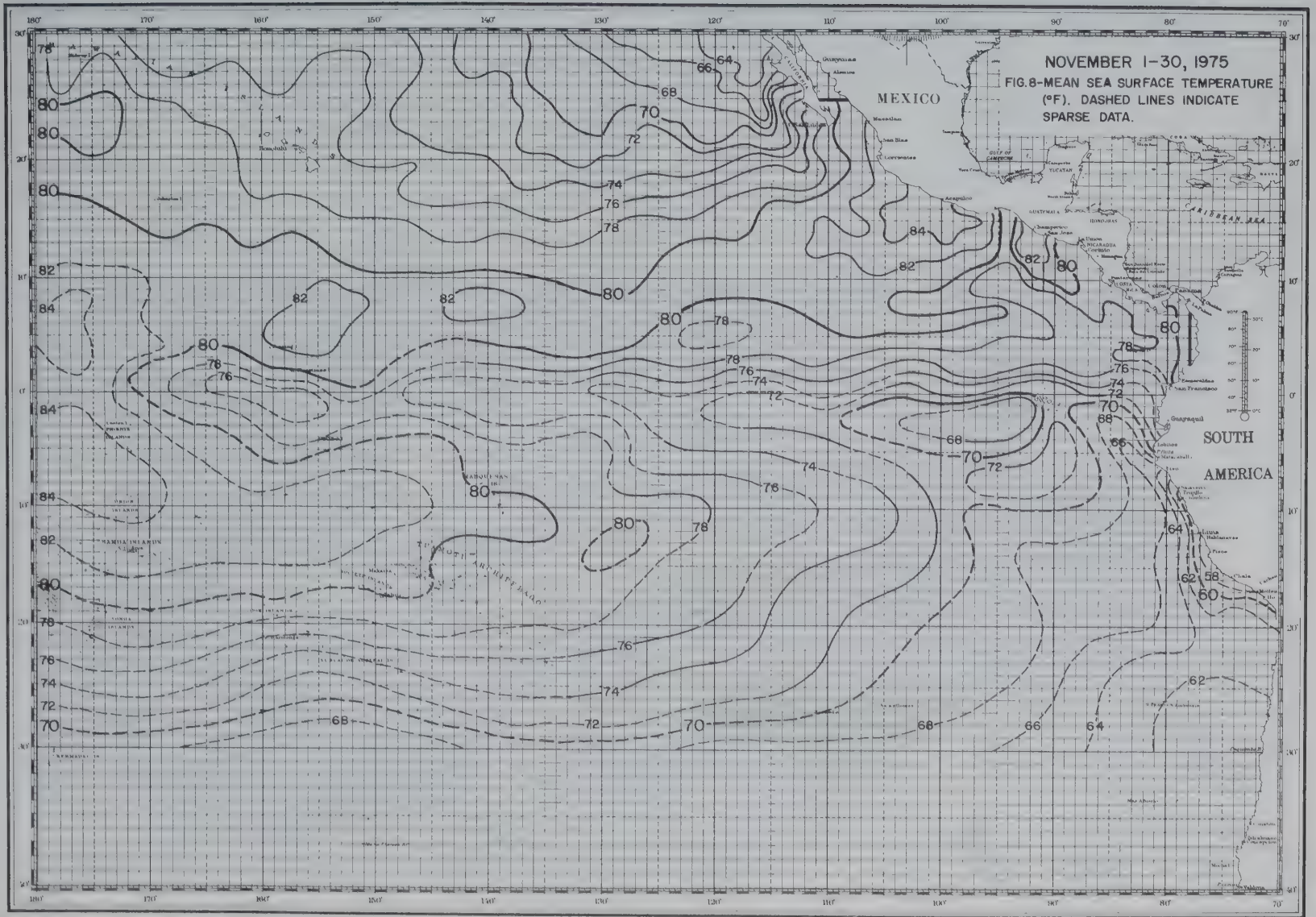

NOVEMBER 1-30, 1975
FIG.3-MEAN SEA SURFACE TEMPERATURE (°F)
50°
40°
30°
20°
180°
170°
160°
150°
140°
130°
120°


NOVEMBER 1-30, 1975
FIG.4-MEAN SEA SURFACE TEMPERATURE (°F)
60°
50°
40°
30°
20°
120°
130°
140°
150°
160°
170°
180°
42
44
46
48
50
52
54
56
58
60
62
64
66
68
70
72
74
76
78
80
82
84


NOVEMBER 1-30, 1975
FIG. 5 - DEVIATION OF SEA SURFACE TEMP. (°F) FROM 20 YEAR MEAN (1948-1967). HATCHED AREAS COLDER IN 1975. 2°F = 1.1°C
50°
40°
30°
20°
180°
170°
160°
150°
140°
130°
120°
0
2
4


NOVEMBER 1-30, 1975
FIG. 6 - DEVIATION OF SEA SURFACE TEMP. (°F) FROM 20 YEAR MEAN (1948-1967). HATCHED AREAS COLDER IN 1975. 2°F = 1.1°C
60°
50°
40°
30°
20°
120°
130°
140°
150°
160°
170°
180°


NOVEMBER 1-30, 1975
FIG.7 DEVIATION OF SEA SURFACE TEMP. (°F) FROM NOVEMBER 1974. HATCHED AREAS COLDER IN 1975. 2°F = 1.1°C
50°
40°
30°
20°
180°
170°
160°
150°
140°
130°
120°


NOVEMBER 1-30, 1975
FIG.8-MEAN SEA SURFACE TEMPERATURE (°F). DASHED LINES INDICATE SPARSE DATA.
MEXICO
SOUTH AMERICA
CARIBBEAN SEA
GUATEMALA
HONDURAS
NICARAGUA
YUCATAN
Acapulco
Guayaquil
San Francisco
Lima
Callao
Iquique
Antofagasta
Valparaiso
Talcahuano
Arica
Tocopilla
Coquimbo
Mazatlan
San Blas
Manzanillo
Puerto Vallarta
Salina Cruz
Puerto Angel
Puerto Armuelles
Balboa
Panama
Colon
Cristobal
Buenaventura
Tumaco
Esmeraldas
Manta
Puerto Bolivar
Chimbote
Pisco
Mollendo
Arica
Iquique
Tocopilla
Antofagasta
Coquimbo
Valparaiso
Talcahuano
Puerto Montt
Corral
Punta Arenas
Puerto Williams
Cape Horn
Juan Fernandez Islands
Easter Island
Galapagos Islands
Marquesas Islands
Tuamotu Archipelago
Samoa Islands
Tonga Islands
Fiji Islands
Society Islands
Tahiti
Pitcairn Island
Bermuda
Azores
Canary Islands
Madeira
Cape Verde Islands
Ascension
St. Helena
Tristan da Cunha
Gough Island
Falkland Islands
South Georgia
South Sandwich Islands
Bouvet Island
Prince Edward Islands
Crozet Islands
Kerguelen
Heard Island
McDonald Islands
Amsterdam Island
St. Paul Island
Macquarie Island
Auckland Islands
Campbell Island
Antipodes Islands
Bounty Islands
Chatham Islands
Kermadec Islands
Norfolk Island
Lord Howe Island
New Caledonia
Loyalty Islands
New Hebrides
Solomon Islands
Bismarck Archipelago
Admiralty Islands
Caroline Islands
Marshall Islands
Gilbert Islands
Ellice Islands
Phoenix Islands
Line Islands
Marquesas Islands
Tuamotu Archipelago
Society Islands
Austral Islands
Cook Islands
Samoa Islands
Tonga Islands
Fiji Islands

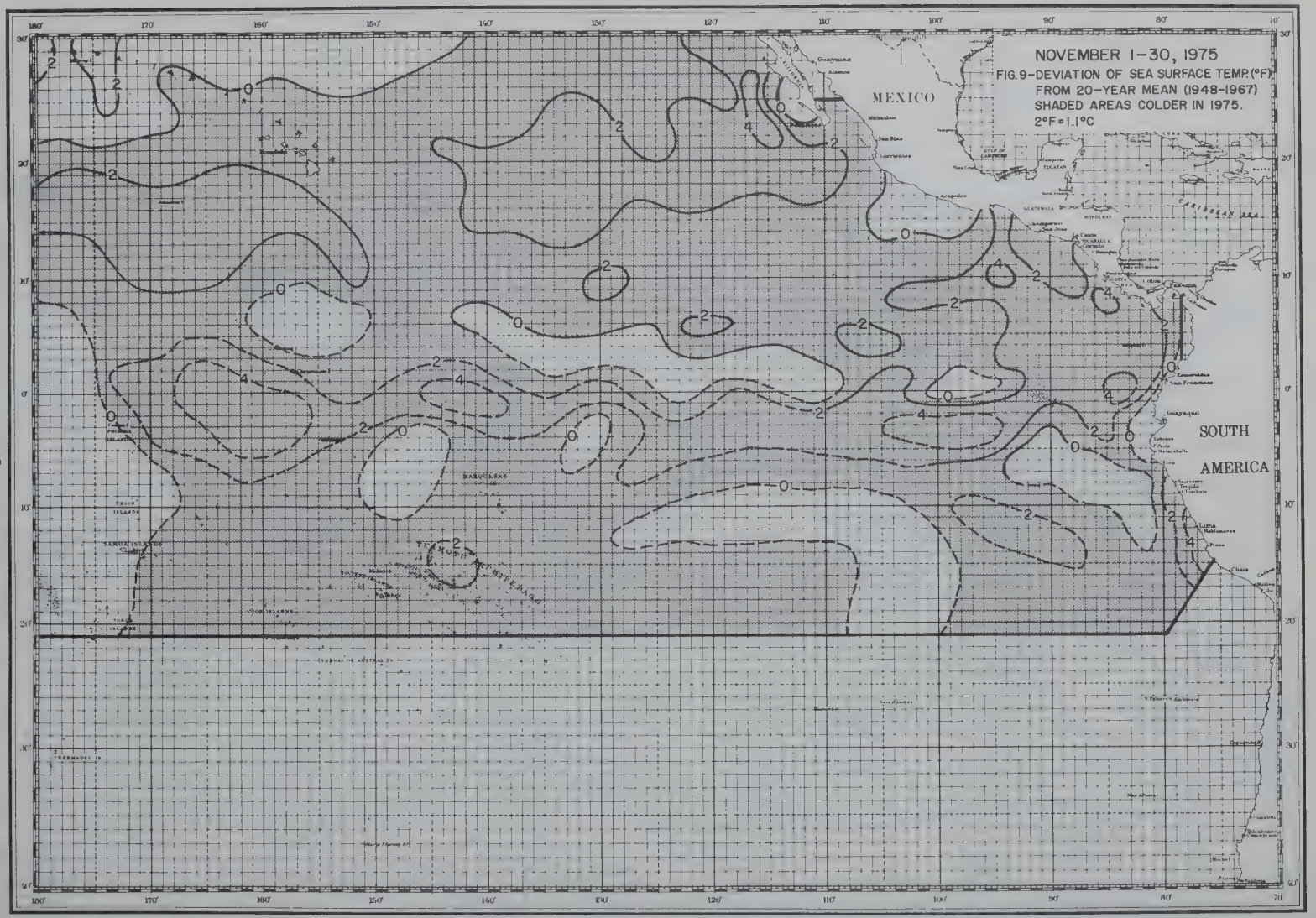
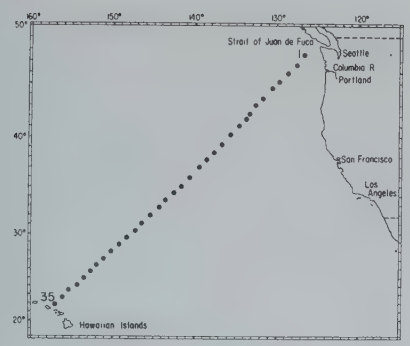
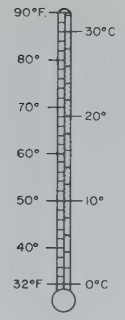

NOVEMBER 1–30, 1975
FIG. 9–DEVIATION OF SEA SURFACE TEMP. (°F) FROM 20-YEAR MEAN (1948-1967) SHADED AREAS COLDER IN 1975.
2°F = 1.1°C
MEXICO
SOUTH AMERICA
CARIBBEAN SEA
GUATEMALA
HONDURAS
YUCATAN
GULF OF CARIBBEAN
Guaymas
Alamos
Mazatlan
San Blas
Lazaro Cardenas
Acapulco
Guayaquil
Lima
Callao
Paita
Salaverry
Trujillo
Chimbote
Huacho
Pisco
Chala
Mollendo
Arica
Iquique
Antofagasta
Coquimbo
Valparaiso
San Antonio
Talcahuano
Corral
Puerto Montt
Chiloe
Corcovado
Esmeraldas
San Francisco
Cristobal
Balboa
Puntarenas
Corinto
Salina Cruz
Manzanillo
Puerto Vallarta
Mazatlan
Guaymas
Topolobampo
Mazatlan
Isla Socorro
Isla Clarion
Isla Guadalupe
Isla Cedros
Isla Natividad
Isla Cerros
Isla Margarita
Isla Coiba
Isla Malpelo
Isla Gorgona
Isla Galapagos
Isla Pascua
Isla Sala y Gomez
Isla Desventuradas
Isla Juan Fernandez
Isla Robinson Crusoe
Isla Alejandro Selkirk
Isla Mas Afuera
Isla Mas a Tierra
Isla Santa Maria
Isla Mocha
Isla Guafo
Isla Chiloe
Isla Wellington
Isla Taitao
Isla Duque de York
Isla Diego Ramirez
Isla Hoste
Isla Navarino
Isla Picton
Isla Nueva
Isla Lennox
Isla Gable
Isla Barnevelt
Isla Evout
Isla Deceit
Isla Elizabeth
Isla Pitt
Isla Ducie
Isla Henderson
Isla Oeno
Isla Pitcairn
Isla Gambier
Isla Mangareva
Isla Tuamotu
Isla Tubuai
Isla Rapa
Isla Raivavae
Isla Rurutu
Isla Rimatara
Isla Rurutu
Isla Tubuai
Isla Raivavae
Isla Rapa
Isla Tuamotu
Isla Gambier
Isla Mangareva
Isla Pitcairn
Isla Oeno
Isla Henderson
Isla Ducie
Isla Pitt
Isla Elizabeth
Isla Deceit
Isla Evout
Isla Barnevelt
Isla Gable
Isla Lennox
Isla Nueva
Isla Picton
Isla Navarino
Isla Hoste
Isla Diego Ramirez
Isla Duque de York
Isla Taitao
Isla Wellington
Isla Chiloe
Isla Guafo
Isla Mocha
Isla Santa Maria
Isla Mas a Tierra
Isla Mas Afuera
Isla Alejandro Selkirk
Isla Robinson Crusoe
Isla Juan Fernandez
Isla Desventuradas
Isla Sala y Gomez
Isla Pascua
Isla Galapagos
Isla Gorgona
Isla Malpelo
Isla Coiba
Isla Margarita
Isla Cerros
Isla Natividad
Isla Cedros
Isla Guadalupe
Isla Clarion
Isla Socorro
Isla Mas Afuera
Isla Mas a Tierra
Isla Santa Maria
Isla Mocha
Isla Guafo
Isla Chiloe
Isla Wellington
Isla Taitao
Isla Duque de York
Isla Diego Ramirez
Isla Hoste
Isla Navarino
Isla Picton
Isla Nueva
Isla Lennox
Isla Gable
Isla Barnevelt
Isla Evout
Isla Deceit
Isla Elizabeth
Isla Pitt
Isla Ducie
Isla Henderson
Isla Oeno
Isla Pitcairn
Isla Gambier
Isla Mangareva
Isla Tuamotu
Isla Tubuai
Isla Rapa
Isla Raivavae
Isla Rurutu
Isla Rimatara
Isla Rurutu
Isla Tubuai
Isla Raivavae
Isla Rapa
Isla Tuamotu
Isla Gambier
Isla Mangareva
Isla Pitcairn
Isla Oeno
Isla Henderson
Isla Ducie
Isla Pitt
Isla Elizabeth
Isla Deceit
Isla Evout
Isla Barnevelt
Isla Gable
Isla Lennox
Isla Nueva
Isla Picton
Isla Navarino
Isla Hoste
Isla Diego Ramirez
Isla Duque de York
Isla Taitao
Isla Wellington
Isla Chiloe
Isla Guafo
Isla Mocha
Isla Santa Maria
Isla Mas a Tierra
Isla Mas Afuera
Isla Alejandro Selkirk
Isla Robinson Crusoe
Isla Juan Fernandez
Isla Desventuradas
Isla Sala y Gomez
Isla Pascua
Isla Galapagos
Isla Gorgona
Isla Malpelo
Isla Coiba
Isla Margarita
Isla Cerros
Isla Natividad
Isla Cedros
Isla Guadalupe
Isla Clarion
Isla Socorro

FIGURE 10





HONOLULU — SEATTLE
(Makapuu Pt. — St. of Juan de Fuca)

OCTOBER 23-29, 1975

CALIFORNIAN

VOYAGE 264

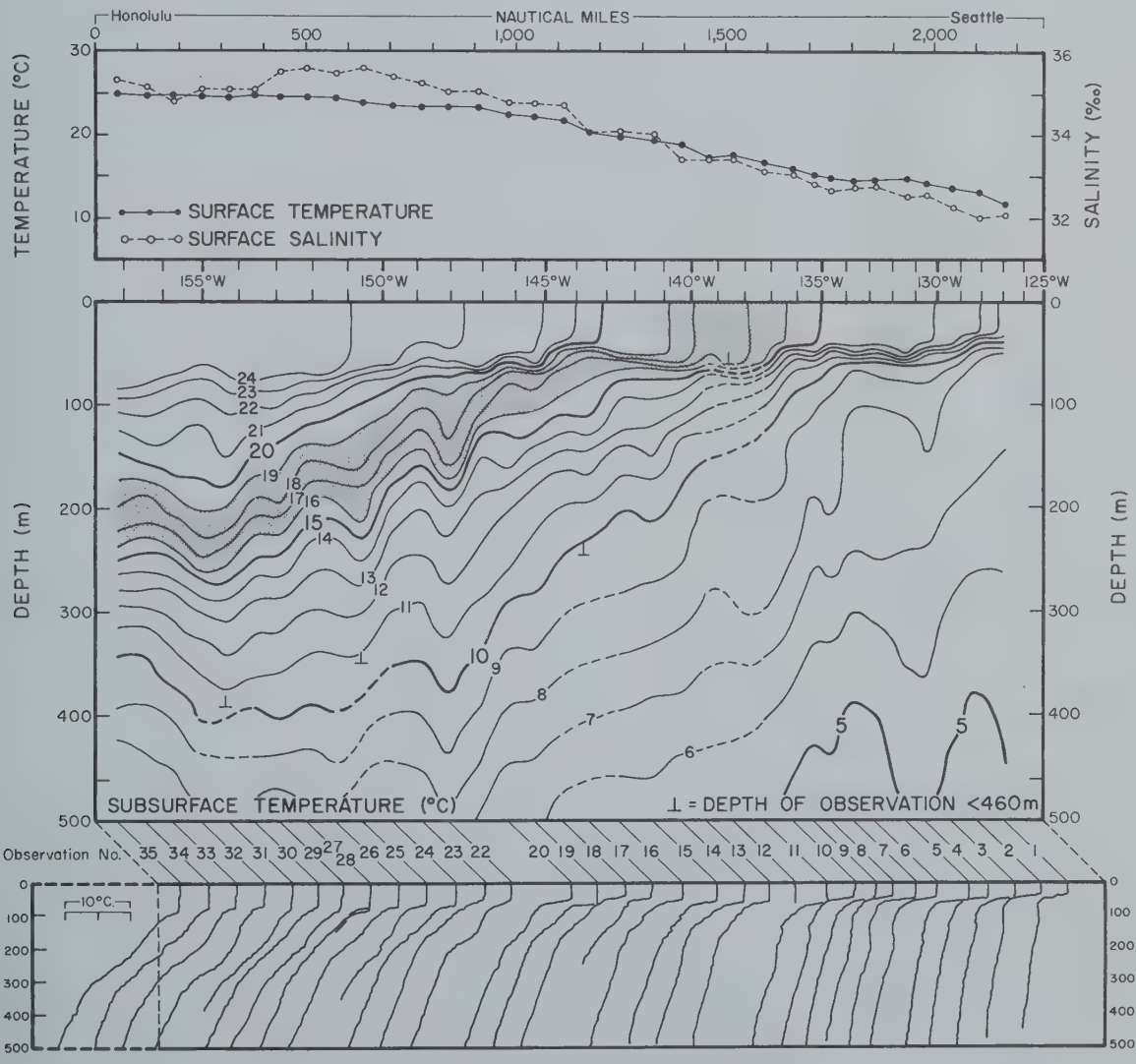
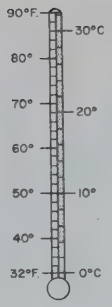


FIGURE 11

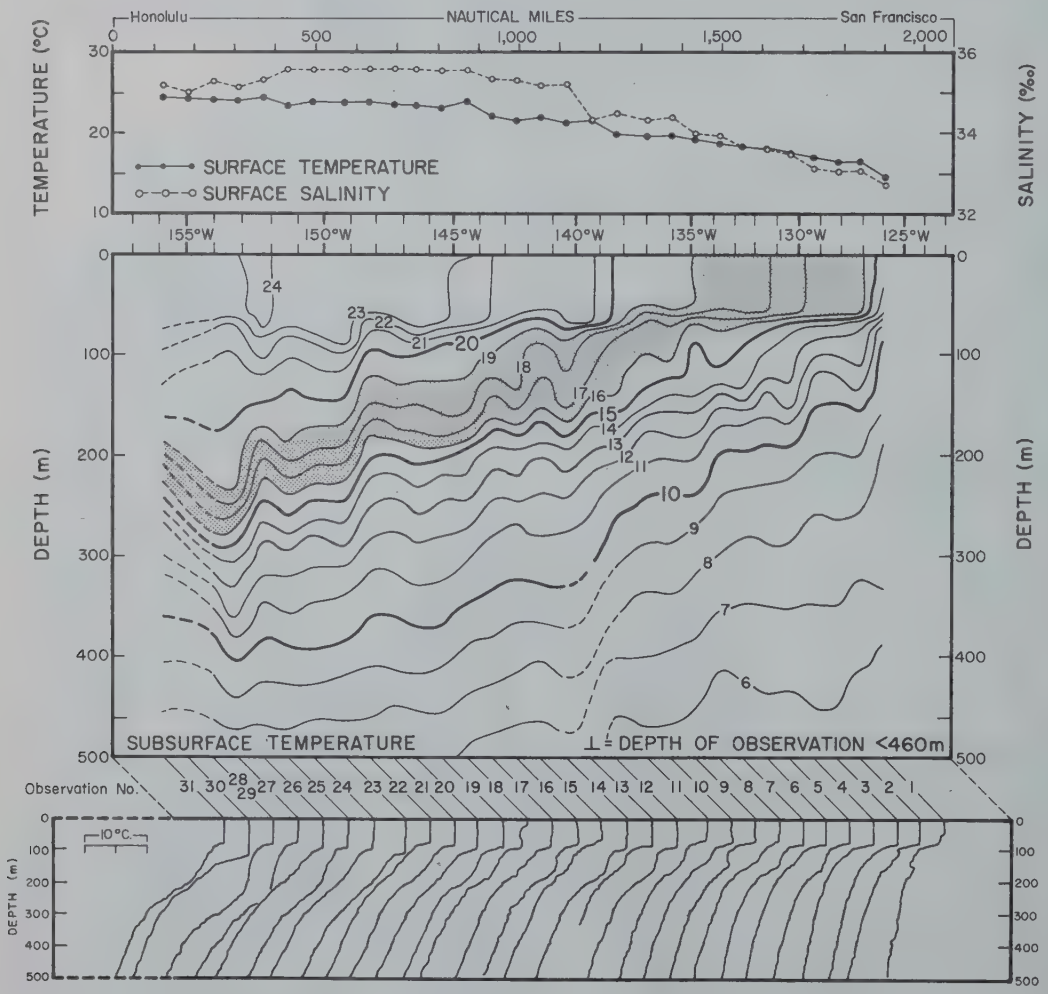


HONOLULU – SAN FRANCISCO

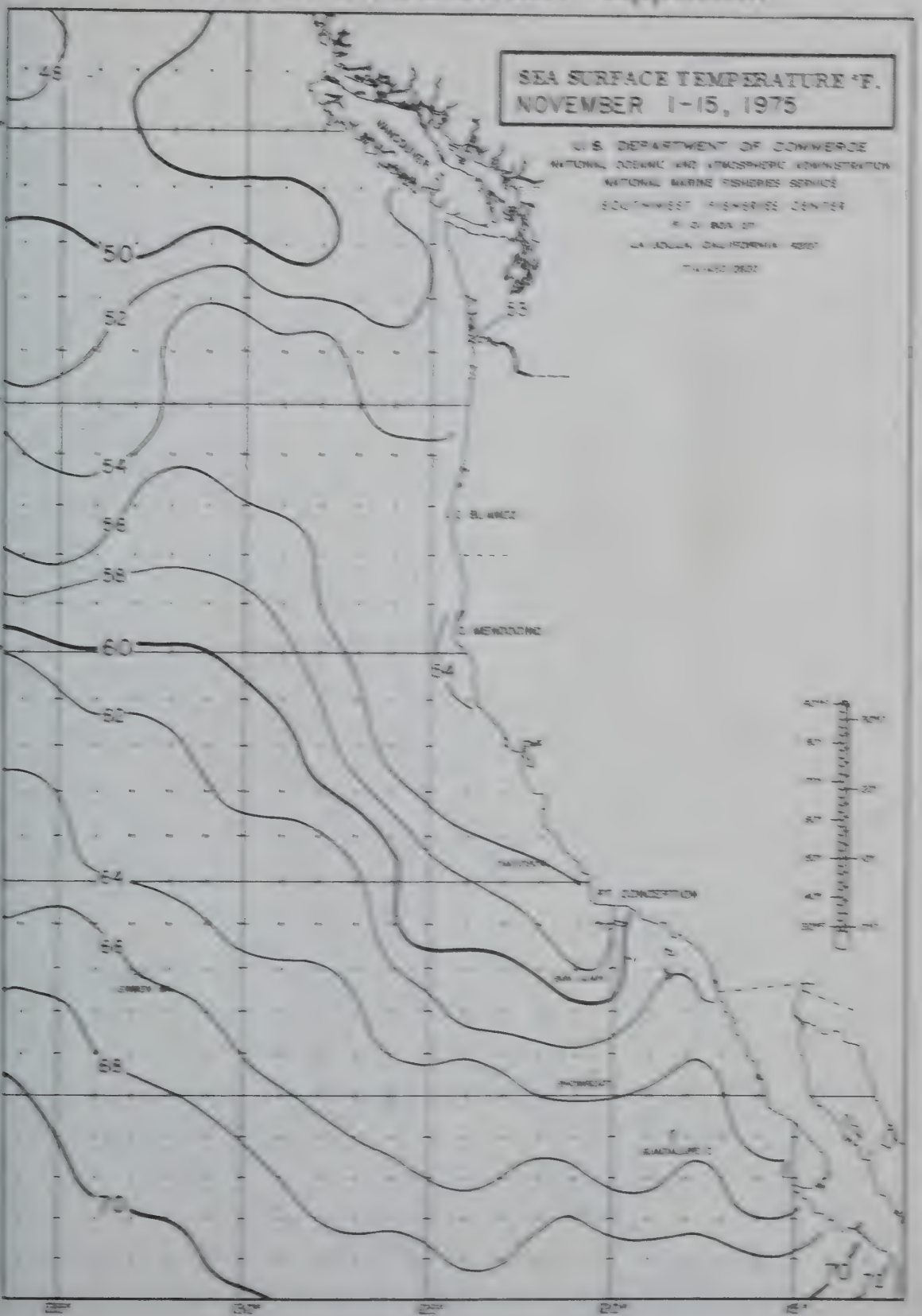
NOV. 6-11, 1975

HAWAIIAN QUEEN

VOYAGE 169



FISHING INFORMATION - supplement



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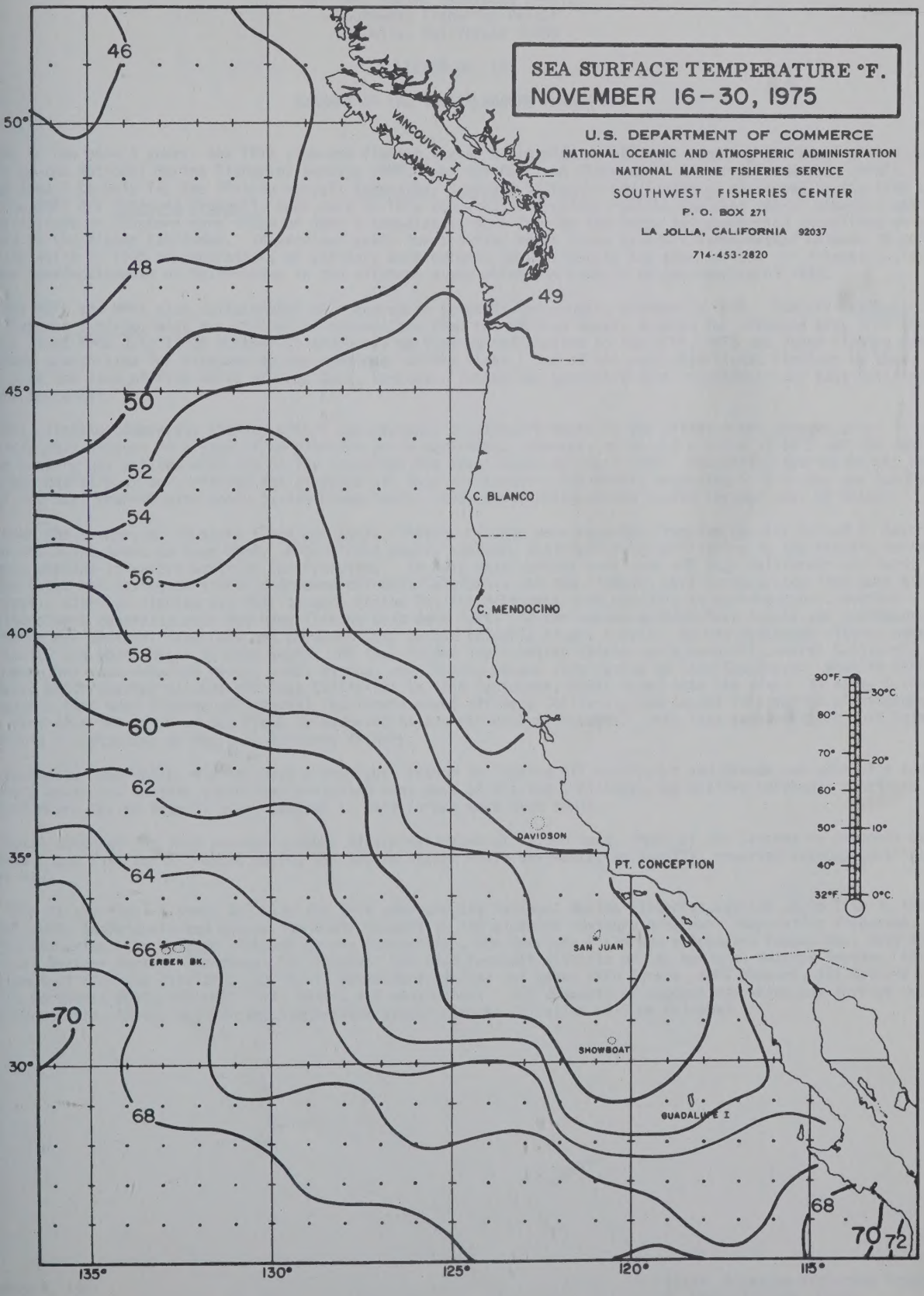

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL MARINE FISHERIES SERVICE
Southwest Fisheries Center
La Jolla, California 92038

BULLETIN No. 10

SUMMARY OF THE 1975 ALBACORE SEASON

As in the past 3 years, the 1975 albacore fishing season began with an offshore scouting and tagging study con-
ted by the National Marine Fisheries Service (NMFS) and the American Fishermen's Research Foundation (AFRF).
ing June 1 to July 14, the fishing vessels Kamchatka, Sunrise, Vivian M. and Sundance, chartered by the AFRF along
the NMFS R/V Townsend Cromwell, took part in this cooperative program. Unlike the past years, however, small
centrations of albacore were found on June 2 immediately upon leaving San Diego and commercial quantities were
ated in the higher latitudes. In previous years the scouting boats found albacore concentrated between 33-36°N
itude while in 1975 concentrations of albacore were between 36-39°N during the same period. Of interest, also,
the ineffectiveness of baitfishing in the offshore areas which was similar to the results of 1973.

The AFRF and NMFS also collaborated on a nearshore scouting and tagging program in 1975. The F/V Kamchatka,
Olga and Sunrise, with two biological technicians from the NMFS on board, scouted for albacore away from the
hing fleet from July 17 to October 21 and provided fishing information to the AFRF, NMFS and other fishing boats
reduce search-time for albacore by the remainder of the fleet. Two of the most significant findings by these
ts were the lack of fish north of Cape Cook, Vancouver Island and concentrations of albacore off Baja California
ate September.

Only limited commercial fishing effort was expended by albacore boats in the offshore and inshore areas in June
early July because of a lack of an albacore price agreement. However, on July 8 a price of $675 per ton delivered
the cannery was settled with one of the canneries and boats began to leave port. Meanwhile, sportboats out of
Diego had already been fishing for albacore off Baja and southern California beginning in mid-June and had begun
of the best sportfishing years by San Diego boats. The sportfishing season lasted through most of October.

When the commercial albacore fleet did start fishing, catches were reported from San Benitos Island to Geronimo
and and Point Arena to Cape Cook. Most of the boats, however, anticipated better fishing in the Pacific Northwest
were working in waters north of San Francisco. In July many catches were made off Baja California and Point Arena
Cape Cook, but in August scores decreased off Baja California and the jigboats were concentrated from Coos Bay to
e Cook. Although fishing was fair to good in the Pacific Northwest from mid-July to mid-September, weather
ditions were generally poor and many fishing days were lost. As the season entered late August and September,
fishing was best off Cape Cook and Crescent City to the Columbia River, however, by mid-September fishing became
spotty and boats began to move south. As they headed south better catches were made off central California in
tember, but seas remained rough, winds strong, and fishing became very spotty by late September. When an AFRF
rtered boat reported catches off Baja California in late September, boats moved into the area. By early October,
vessels that were fishing off central California moved off Baja California and caught fair scores of albacore in
ts from 60 miles south of San Diego to Geronimo Island for most of October. This late season fishing off Baja
ifornia was atypical of the U.S. albacore fishery.

Baitboats, meanwhile, did not have a very good season as fishing off Washington and Oregon was generally poor
these boats and weather conditions prevented many days of fishing. Although the smaller baitboats continued to
n off Morro Bay in late October, catches in other areas were also small.

Total landings for 1975 through October 31 are estimated at 23,500 tons. Most of the catches by jigboats were
10-15 pound fish for all areas during the entire season while baitboats, as usually, reported catches on slightly
ger fish.

This is the final Fishery Bulletin for this year and the National Marine Fisheries Service would like to thank
following individuals and groups for their support in the albacore advisory program: cooperating fishermen, fish
ers, canneries, the Western Fishboat Owners Association, the American Fishermen's Research Foundation, Navy Fleet
erical Weather Central (Monterey, California), Extended Forecast Division of the National Weather Service, Oregon
artment of Fish and Wildlife, California Department of Fish and Game, KRED Eureka, KNPT Newport, KFX Astoria,
ific Northwest Bell, WWD, NMC Point Reyes, and many others. Any comments or suggestions which may inprove our
ly broadcasts, 15-day sea-surface temperature and/or Fishery Bulletins will be welcomed.

ember 4, 1975

Staff, Albacore Fisheries Program
R. Michael Laurs, Leader